

Claims

1. A method of screening for therapeutic agents useful in the treatment of a disease comprised in a group of diseases consisting of hematological diseases, cancer, dermatological diseases, endocrinological diseases, metabolic diseases, inflammation, respiratory diseases, neurological diseases, cardiovascular diseases and urological diseases in a mammal comprising the steps of
  - i) contacting a test compound with a PHEX polypeptide,
  - ii) detect binding of said test compound to said PHEX polypeptide.
2. A method of screening for therapeutic agents useful in the treatment of a disease comprised in a group of diseases consisting of hematological diseases, cancer, dermatological diseases, endocrinological diseases, metabolic diseases, inflammation, respiratory diseases, neurological diseases, cardiovascular diseases and urological diseases in a mammal comprising the steps of
  - i) determining the activity of a PHEX polypeptide at a certain concentration of a test compound or in the absence of said test compound,
  - ii) determining the activity of said polypeptide at a different concentration of said test compound.
3. A method of screening for therapeutic agents useful in the treatment of a disease comprised in a group of diseases consisting of hematological diseases, cancer, dermatological diseases, endocrinological diseases, metabolic diseases, inflammation, respiratory diseases, neurological diseases, cardiovascular diseases and urological diseases in a mammal comprising the steps of
  - i) determining the activity of a PHEX polypeptide at a certain concentration of a test compound,
  - ii) determining the activity of a PHEX polypeptide at the presence of a compound known to be a regulator of a PHEX polypeptide.
4. The method of any of claims 1 to 3, wherein the step of contacting is in or at the surface of a cell.
5. The method of any of claims 1 to 3, wherein the cell is in vitro.

6. The method of any of claims 1 to 3, wherein the step of contacting is in a cell-free system.
7. The method of any of claims 1 to 3, wherein the polypeptide is coupled to a detectable label.
8. The method of any of claims 1 to 3, wherein the compound is coupled to a detectable label.
- 5 9. The method of any of claims 1 to 3, wherein the test compound displaces a ligand which is first bound to the polypeptide.
10. The method of any of claims 1 to 3, wherein the polypeptide is attached to a solid support.
11. The method of any of claims 1 to 3, wherein the compound is attached to a solid support.
12. A method of screening for therapeutic agents useful in the treatment of a disease comprised in a group of diseases consisting of hematological diseases, cancer, dermatological diseases, endocrinological diseases, metabolic diseases, inflammation, respiratory diseases, neurological diseases, cardiovascular diseases and urological diseases in a mammal comprising the steps of
  - i) contacting a test compound with a PHEX polynucleotide,
  - 15 ii) detect binding of said test compound to said PHEX polynucleotide.
13. The method of claim 12 wherein the nucleic acid molecule is RNA.
14. The method of claim 12 wherein the contacting step is in or at the surface of a cell.
15. The method of claim 12 wherein the contacting step is in a cell-free system.
16. The method of claim 12 wherein polynucleotide is coupled to a detectable label.
- 20 17. The method of claim 12 wherein the test compound is coupled to a detectable label.
18. A method of diagnosing a disease comprised in a group of diseases consisting of hematological diseases, cancer, dermatological diseases, endocrinological diseases, metabolic diseases, inflammation, respiratory diseases, neurological diseases, cardiovascular diseases and urological diseases in a mammal comprising the steps of
  - i) determining the amount of a PHEX polynucleotide in a sample taken from said mammal,

- ii) determining the amount of PHEX polynucleotide in healthy and/or diseased mammals.

19. A pharmaceutical composition for the treatment of a disease comprised in a group of diseases consisting of hematological diseases, cancer, dermatological diseases, endocrinological diseases, metabolic diseases, inflammation, respiratory diseases, neurological diseases, cardiovascular diseases and urological diseases in a mammal comprising a therapeutic agent which binds to a PHEX polypeptide.

5

20. A pharmaceutical composition for the treatment of a disease comprised in a group of diseases consisting of hematological diseases, cancer, dermatological diseases, endocrinological diseases, metabolic diseases, inflammation, respiratory diseases, neurological diseases, cardiovascular diseases and urological diseases in a mammal comprising a therapeutic agent which regulates the activity of a PHEX polypeptide.

10

21. A pharmaceutical composition for the treatment of a disease comprised in a group of diseases consisting of hematological diseases, cancer, dermatological diseases, endocrinological diseases, metabolic diseases, inflammation, respiratory diseases, neurological diseases, cardiovascular diseases and urological diseases in a mammal comprising a therapeutic agent which regulates the activity of a PHEX polypeptide, wherein said therapeutic agent is

15

- i) a small molecule,
- 20 ii) an RNA molecule,
- iii) an antisense oligonucleotide,
- iv) a polypeptide,
- v) an antibody, or
- vi) a ribozyme.

25 22. A pharmaceutical composition for the treatment of a disease comprised in a group of diseases consisting of hematological diseases, cancer, dermatological diseases, endocrinological diseases, metabolic diseases, inflammation, respiratory diseases, neurological diseases, cardiovascular diseases and urological diseases in a mammal comprising a PHEX polynucleotide.

30 23. A pharmaceutical composition for the treatment of a disease comprised in a group of diseases consisting of hematological diseases, cancer, dermatological diseases, endocrinological diseases, metabolic diseases, inflammation, respiratory diseases,

neurological diseases, cardiovascular diseases and urological diseases in a mammal comprising a PHEX polypeptide.

24. Use of regulators of a PHEX for the preparation of a pharmaceutical composition for the treatment of a disease comprised in a group of diseases consisting of hematological diseases, cancer, dermatological diseases, endocrinological diseases, metabolic diseases, inflammation, respiratory diseases, neurological diseases, cardiovascular diseases and urological diseases in a mammal.
25. Method for the preparation of a pharmaceutical composition useful for the treatment of a disease comprised in a group of diseases consisting of hematological diseases, cancer, dermatological diseases, endocrinological diseases, metabolic diseases, inflammation, respiratory diseases, neurological diseases, cardiovascular diseases and urological diseases in a mammal comprising the steps of
  - i) identifying a regulator of PHEX,
  - ii) determining whether said regulator ameliorates the symptoms of a disease comprised in a group of diseases consisting of hematological diseases, cancer, dermatological diseases, endocrinological diseases, metabolic diseases, inflammation, respiratory diseases, neurological diseases, cardiovascular diseases and urological diseases in a mammal; and
  - iii) combining of said regulator with an acceptable pharmaceutical carrier.
26. Use of a regulator of PHEX for the regulation of PHEX activity in a mammal having a disease comprised in a group of diseases consisting of hematological diseases, cancer, dermatological diseases, endocrinological diseases, metabolic diseases, inflammation, respiratory diseases, neurological diseases, cardiovascular diseases and urological diseases.